

The Tool Engineer

Vol. 11, No. 10

February

1935

IN THIS ISSUE

Beginning of a new era

Vocational
Organization

of Vital Interest to the
"Creative Engineer"



See Page 15

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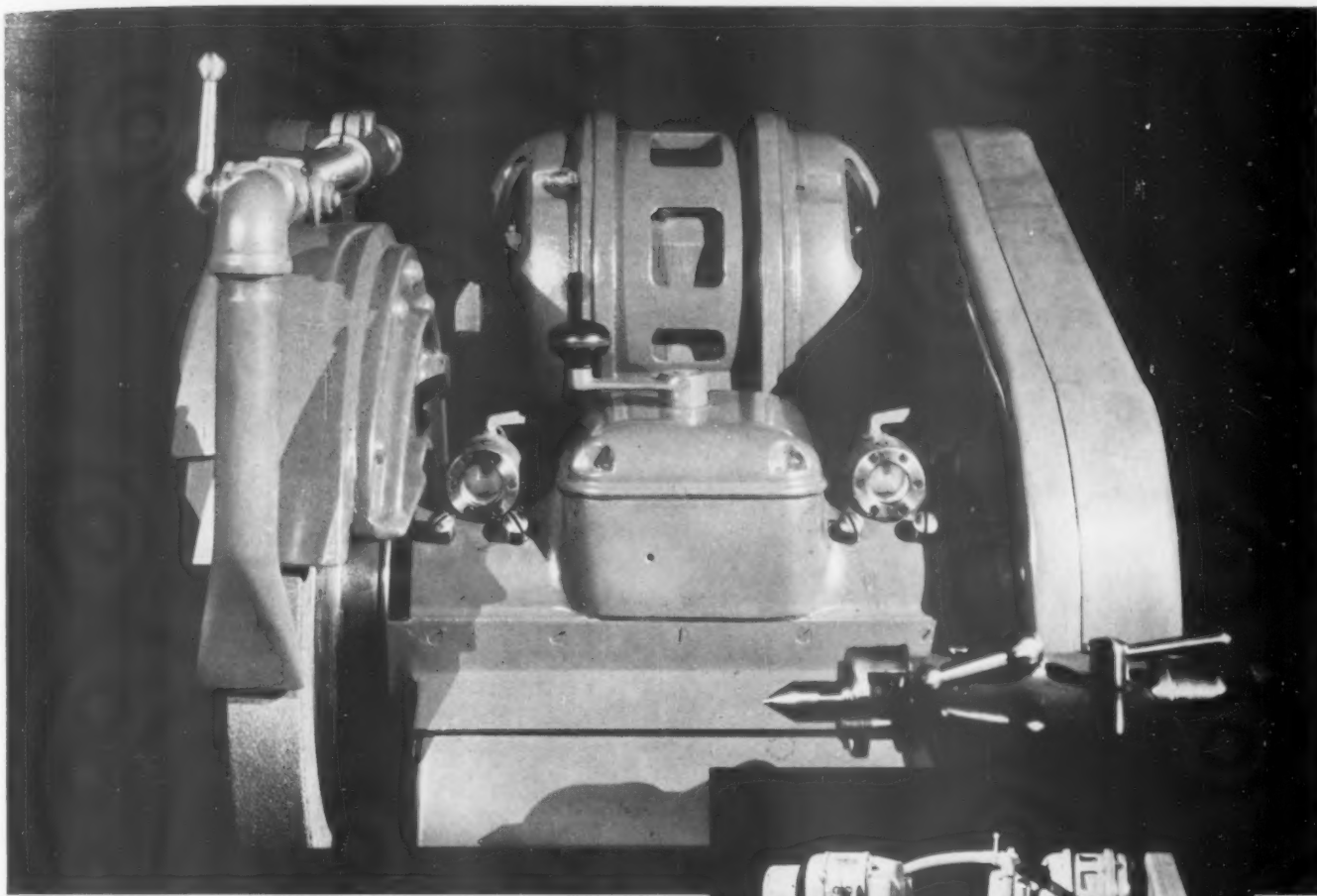
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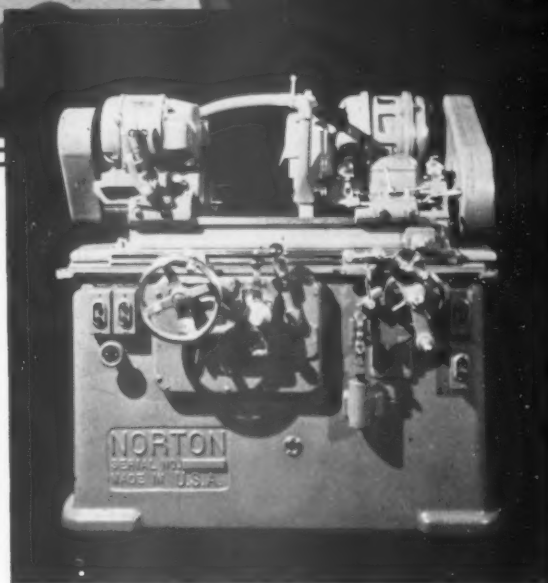




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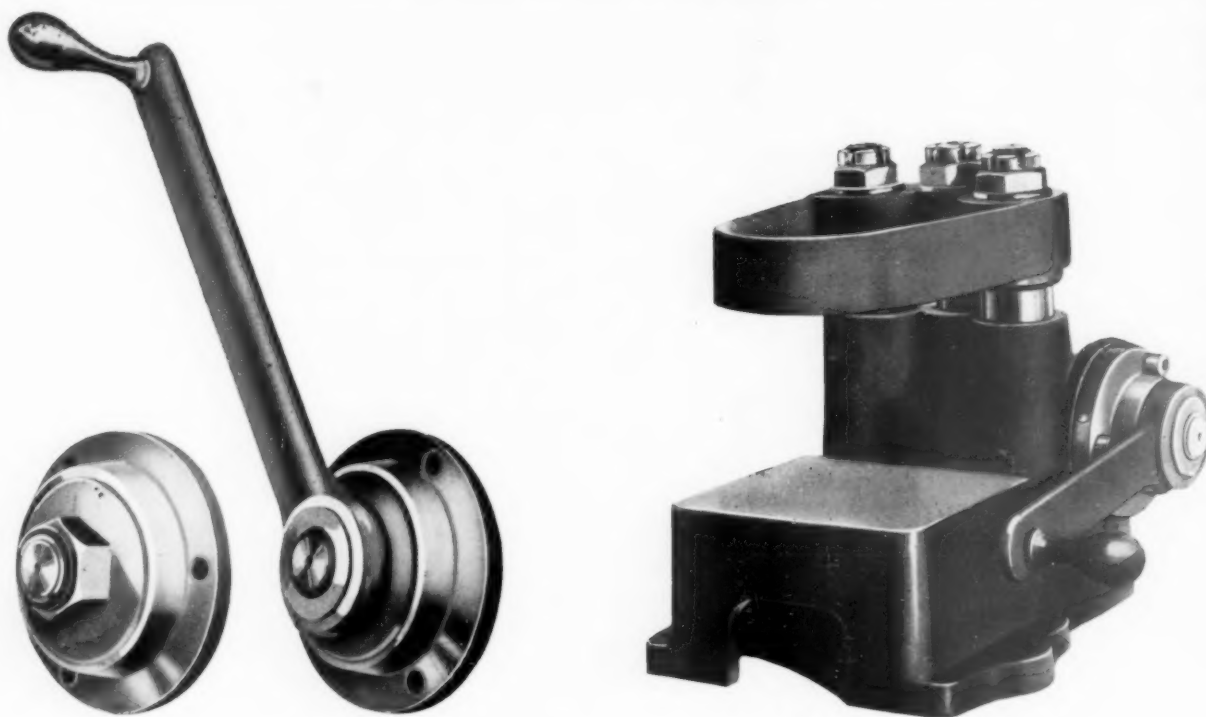


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The Tool Engineer

Official Publication of the AMERICAN SOCIETY OF TOOL ENGINEERS

Vol. III

February, 1935

No. 10

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Application blanks and information pertaining to membership in the American Society of Tool Engineers may be had by addressing *The Tool Engineer*, 6432 Cass Avenue, Detroit, Michigan, or the Secretary's office, 8316 Woodward Ave., Detroit, Mich.

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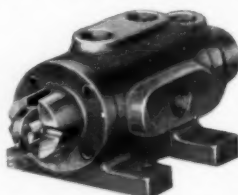
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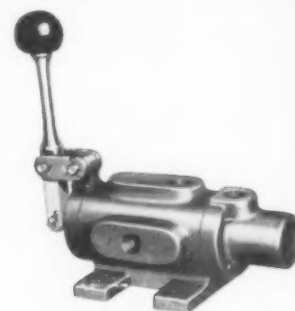
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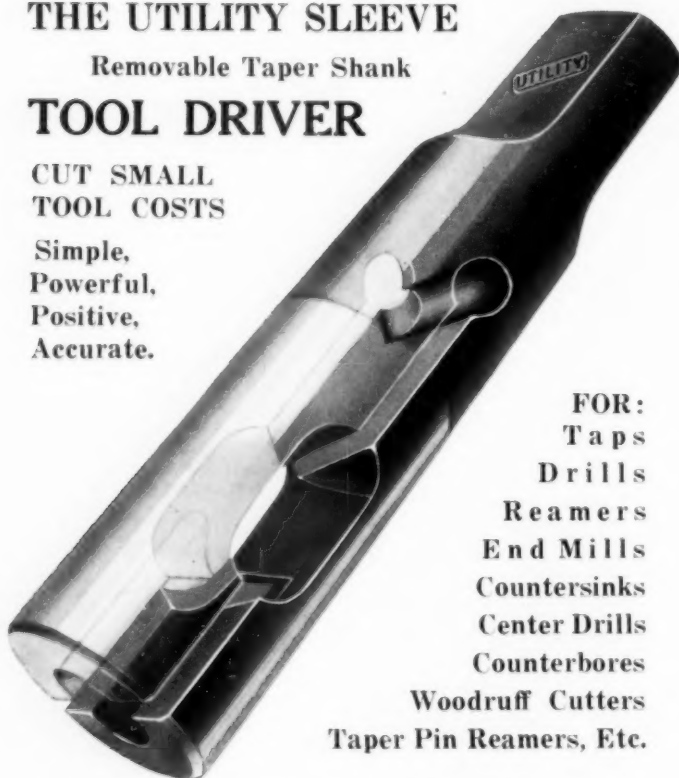
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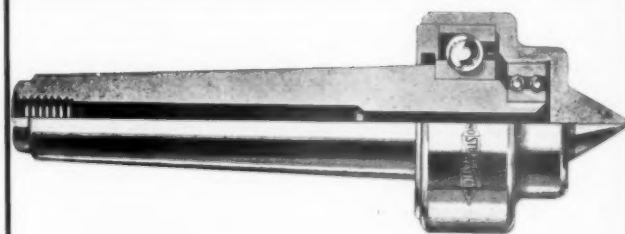


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FEBRUARY MEETING

(DETROIT)

HOTEL FORT SHELBY BALLROOM

February 14th, (Thursday)

(Not a Dinner Meeting)

MEETING 8:00 P. M.

TWO SPEAKERS



IRVING G. THOMAS



GEORGE F. AUSTIN, Jr.

Subject: "The Counterbore and End Cutting Tool Industries Relative to the Machine and Metal Production Industries."

Speaker: Mr. Irving G. Thomas, Member American Society of Tool Engineers.

Mr. Thomas is well known in the automotive industries, and is a former S.A.E. member. He designed, developed and manufactured the light 6 Lozier and the original Cleveland 6. He has also been connected with such firms as Pierce-Arrow, Packard, Timken-Detroit Axle Company, Eaton Axle and Spring, General Motors Corporation and others, in various executive capacities such as Chief Inspector, Master Mechanic, Mechanical and Efficiency Engineer.

Mr. Thomas has been connected with the Eclipse Counterbore Company for the past six and one half years as general superintendent.

Subject: "Another Phase of Weights and Measures."

Speaker: George F. Austin, Jr., Supervising Investigator Bureau of Weights and Measures, Detroit, Michigan.

Mr. Austin has been connected with the Detroit Bureau of Weights and Measures for the past sixteen years. He is Chairman of the Michigan Association of Weights and Measures Officials and Treasurer of the National Conference of Weights and Measures.

He is exceptionally well qualified to speak on his subject, which has much interest to many members.

Post Nobulus Phoebus (Liberal translation) "Refreshments after the meeting."

(Refreshments are free)

PRODUCTION PERSPECTIVES

A.E.T.Eers sure have been busy these past weeks since the holidays . . . and we mean *busy*, both in the plants as well as in social activities, from what we can see and hear. One shop we saw making special tools, cutters, etc., three months ago had less than six men working . . . now, they have more than fifty, *and two shifts going every day*. We hear, too, that **John N. Willys** has been elected president of the Willys-Overland Company, Toledo. David R. Wilson, former president will continue as co-receiver with Mr. Willys. Undoubtedly, their job will be to take the company out of receivership. **Ivar J. Ecklund**, we hear, has recently been appointed Chief Engineer of Midland Steel Products Company in Detroit. He will have charge of all engineering of the company including tool design.

Jack Rovick, of the Michigan Tool Company, returned from Europe just after the holidays. He spent the past year in various continental countries and now returns to continue his work for Michigan Tool. We see that our good friend and member **Walter Kasturski**, of the A.S.T.E. membership committee, is running a certain prominent comedian a close second in the number of daughters he is "daddy" to. A recent addition to the Kasturski domicile was *another girl*.

Ray Hesser of Ford Motor Company has left for Japan, we hear. All join in wishing him a safe return. We were sorry to hear our good friend **C. W. Josephson** lost his father recently. Tool Engineers and A.S.T.Eers offer their condolences, Wally. We were sure glad to see Dick Thompson back on his feet again at **The A.S.T.E. First Annual Ball**. We can't go to press with this page without mentioning this highly successful occasion. Tool Engineers were dancing . . . and . . . while they were dancing they were *glancing* . . . this is some of what they

were glancing *at*. In general, we'd say that tool engineers present did plenty of designing the night (all night for some) of January 25th, . . . cutting curves and angles—not to mention capers—and, including our friend **MacConachie** who, we thought, was designing Scottish dances. We saw **Pete Horn** going up in the elevator, what your editor wants to know, Pete, where were you going ? ? ? We noticed you had on a fur coat. Did you see **Fred Flack** of Dodge Brothers dancing? We saw him dancing with another fellow—how come,—where was your girl Fred? Carl Halborg is an expert on the "grunt and groan" game we hear. He got back too late from wrestling, to see the floor show—and, even the Spanish Grille—maybe he couldn't find it.

There are a couple of A.S.T.Eers who should have special mention for their splendid part in the success of this party—**Joe Siegel** and **Al Sargent**. Joe, as you know is Chairman of the entertainment committee that was responsible for this "swell" occasion and Al had the "grief" of handling the ticket sales and reservations. Both worked hard and devoted many hours to bring about the fine turnout.

Now—a word for the ladies—the party wouldn't have been a success like it was without 'em, . . . but . . . what we need, I fear is a Society Editor. Since the Society's *Society Editor* was absent, the dear ladies will have to pardon us this time for not giving a complete description of their gowns . . . will some nice, good looking girl please apply for the job as soon as possible? We hear that some refreshment tickets were unredeemed . . . hold 'em gang, maybe they'll be good the next time . . . and we hope that won't be too far in the future. One good A.S.T.Eer that we missed a lot was **Bill Smila** . . . where were you Bill on the night of January 25th?

Dowmetal In The Stratosphere

★ by Peter F. Rossmann

The technical discussion on Dowmetal conducted at the January meeting of the Society in Detroit was, largely, in the nature of questions from members and answers from Mr. A. W. Winston, the speaker, of the Dow Chemical Company. The following article prepared by Peter F. Rossmann, member of the American Society of Tool Engineers, in conjunction with Mr. Winston gives a more graphic description of the importance of the Dowmetal in connection with the National Geographic-Air Corps stratosphere ascension. Data and photographs were furnished through the courtesy of the Dow Chemical Company and the National Geographic Society.

—Editor.

HOW hard, shiny metal can be plucked from watery brine, is one of the chemical romances. Scores of other products are made from the salty liquid, from aspirin to table salt, and from plastic flooring materials to brilliant dyes.

One chemical in the brine is magnesium chloride. By a series of steps, water, and then chlorine are driven off, and shining magnesium, one of the lightest of metals, is recovered. The alloy used in building the stratosphere gondola, is 95% pure magnesium. Aluminum is half again as heavy as this alloy, and steel is nearly four and a half times as heavy. It is because of extreme lightness, coupled with great strength, that the alloy has come to play an important part in stratosphere ballooning.

The gondola for the National Geographic Society-Air Corps flight was built of 3/16 inch thick Dowmetal "F" sheet. Top and bottom caps 48 inches in diameter were formed from this sheet by pressing between dies of the proper radius. These caps were joined by eight vertical spherical segments or gores. The seams between the various pieces were joined by welding, done with an ordinary oxy-acetylene torch using Dowmetal "F" rod and a special welding flux which is necessary for the gas welding of Dowmetal. This shell weighs in the neighborhood of 400 pounds.

Openings were cut in the shell to permit welding in the manhole and porthole frames. There were two of these manholes which may be seen in the accompanying photographs. The opening of the manhole is elliptical in shape, approximately 18" x 20" in size. These manholes are closed by inner and outer doors so arranged that the inner door may be fastened in place from within the gondola by a central bolt which goes through to the outer door, firmly binding both doors down upon rubber gaskets, on the manhole frame. All instruments, flooring, shelving etc., had to be so designed that they



The completed gondola mounted on large truck for exhibition purposes.

could be inserted through the manhole opening.

The portholes, of which there were ten, were distributed in the following manner. Four were placed approximately 45 degrees above the equator, symmetrically about the shell. Four were placed 30 degrees below the equator with one exception. A vertical porthole was placed at one side to permit directly downward visibility. Another porthole was placed in the center of the top to permit observation of the balloon overhead. All of these portholes were covered with double thicknesses of 1/4 inch Pyrex glass.

In addition to the openings enumerated, provision was made in the center of the bottom for a camera opening to accommodate the special aerial camera designed by Capt. Stevens, while an additional camera opening was provided a little below the equator at one side. Numerous other small openings were provided to take care of the passage of electrical conductors or for the securing of air samples.

A floor 5 feet in diameter composed of 3/16 inch thick Dowmetal "F" sheet, laid upon Dowmetal structural members, was placed in the bottom. At the edge of this floor, eight vertical stanchions were erected, terminating in a binding ring at the top in contact with the ceiling of the gondola. These stanchions were used for the support of the three shelves which were more or less discontinuous around the interior. The outer edges of these shelves were supported on clips which were welded to the interior of the gondola shell.

Provision was made for the discharge of lead shot ballast through two Dowmetal hoppers, closed at the top by covers fitting upon rubber gaskets and at the bottom by Dowmetal plug cocks. It is necessary to have a tight fitting cover as there would be considerable loss of air otherwise, while the shot is

(Continued on page 14)

AMERICAN SOCIETY OF TOOL ENGINEERS

INCORPORATED

CONSTITUTION

ARTICLE I—NAME, NATURE AND PURPOSE

Section III—In order to advance, promulgate, and further the Arts and Sciences in Tool Engineering among the members of the Society; to bring about good fellowship fraternity and the spirit of brotherhood among the members; to hold readings and discussions on professional papers and reports at meetings called for that purpose; to publish and disseminate such papers and reports to the members—this society is created.

ARTICLE II—MEMBERSHIP

Section I—Membership in this Society shall be classified into two groups (1) Senior and (2) Junior. In order to be admitted to Senior Membership the applicant shall be either (a) Tool Engineer, who is a man of recognized ability, to plan the order of operations; to lay-out; supervise the design and manufacture of tools and equipment; or (b) Tool, Die or Machine Designers having five years experience; or (c) an Executive possessing knowledge of tool engineering for mass production. Before a person may become a Senior Member he must have attained the age of twenty-five years.

Section II—Any tool designer having less than five years experience or any student in a recognized school or college studying tool designing or tool engineering is eligible for Junior Membership.

ARTICLE IV—FEES AND ANNUAL DUES

Section I—The initiation fees for membership in each grade shall be as follows:

(a) Senior Members	\$5.00
(b) Junior Members	5.00

Section II—The annual dues for membership in each grade shall be as follows:

(a) Senior Members	\$3.00
(b) Junior Members	2.00

BY-LAWS

FORMALITIES TOWARD MEMBERSHIP

BL-1—All applicants for Senior or Junior Membership must set forth in the application for membership signatures of at least five members of the Society or if unable to obtain the signatures of members he may give as references the names of non-members familiar with his work. The applicant shall set forth in the application a complete resume of his qualifications for membership.

BL-2—The Board of Directors may in its discretion authorize the organization of enrolled students of the Society as Student Branches at recognized institutions of tool engineering, for purposes which are in harmony with the object of the Society; such branches shall be governed by such rules and regulations as prescribed by the Directors from time to time.

Further information and application blanks may be had by addressing *The Tool Engineer*, 6432 Cass Avenue, Detroit, Michigan

An Organization of Which You Will Be Proud to Be a Member

VOCATIONAL ORGANIZATION

ONCE, in the dear dead days beyond recall, I read a yarn about a couple of hombres gone skyrocketing up to the moon. To make a long story short, it was a darned good shot, considering lack of modern conveniences and the gadgets at the command of our futuristic Buck Rogers. Happy landing over, the Lunatics turned the keys of the city over to the terrestrial visitors, and, after putting on a show, took them on a li'l tour of inspection.

Oh, it was a marvelous civilization those Lunatics had. During the sight seeing tour, the Terrainians expressed curiosity concerning thousands of cubicles ranging the walls of a huge barracks like building, each cubicle containing the apparently mummified body of a Lunatic.

"And what," they asked, "are these?"

"Why those," was the response, "are our workers. You see, right now there is a surplus of labor, so, we just give the workers a shot in the arm and lay them away until needed again. Then, when some new project starts, we just give them another shot and presto! There they are, all rested and rarin' to go."

You know, I've often wondered if the author of that fantasy hadn't at some time or other been a tool designer, and the yarn inspired by a wish for something handsome for the boys during layoffs. Oh well, a laugh at one's own expense is a saving grace; however, the ironical attitude of the average tool designer toward his vocation is not exactly a healthy brand of humor. "Here today and gone tomorrow" seems to be their slogan, especially around the Detroit area, with a resultant decreasing loyalty, increasing cynicism and discontent.

It is time that something is done about it.

Of course, there are associations of draftsmen, organized for just that purpose, (The Draftsmen's Unions some call them) but, however sincere their purposes, they have somehow failed to meet the desires of the majority of the

By A. E. RYLANDER

Member A. S. T. E.

men in the designing vocations. I make this statement in good faith, and when, in this article or those following, such organizations are criticised, that criticism is constructive and sympathetic, and intended to show cause why any organization of engineering workers leaning too closely toward unionism is bound to fail.

The biggest reason of all is the men engaged in designing. While many, and perhaps the most of them, especially in the Detroit area, have entered the drawing room via the tool room or evening school, the fact remains that a considerable proportion of the men are college or technical school graduates, and to this type unionism is anathema. To the engineering graduate, the drawing room is the starting point to a higher position; chief draftsman, superintendent, works manager or big executive. Like the interne in the hospital, reconciling theory with practice, the cub draftsman finds that the drawing room is a post graduate course in the school of experience.

EDITOR'S NOTE

This is the first of a series of articles dealing with relations between employers and employees in the designing and engineering fields. The writer assumes full responsibility for the thoughts expressed; they are his personal opinions and are not intended to involve the American Society of Tool Engineers in any controversy, or to commit it to any side or policy. It is the author's opinion, however, that propaganda detrimental to the interests of engineers in general, and to those engineering workers engaged in the automotive industries especially, is undermining the morale of men in the designing fields, and that unless this propaganda is checked, it will ultimately lower standards—which, if not always attained, have at least been the objective of ambitious men.

The author has nothing more alarming in view than to present both sides of a controversial issue, and knows no better medium than a neutral publication like *The Tool Engineer*. And, since this issue is of interest, not only to thousands of draftsmen, tool and die designers, but to their employers as well, he suggests that, having been apprentice, journeyman machinist and toolmaker, shop foreman, master mechanic and superintendent; draftsman, engineer and executive (and plopped back to tool designing because of the depression) he should be qualified to treat his subject with an impartial attitude toward both employer and employee, and to present the case for both sides with a reasonably clear concept of the factors involved.

And, to dispel any question of ambiguity at the outset, he states as his belief that at no time in the history of industry has harmony between employer and employee been so essential as at present. So, he asks reasonable patience, and reserved judgment where criticism is advanced, since that criticism will be friendly and sympathetic, albeit it may carry a sting at times.

Behind the engineering graduate is tradition; behind the man who stepped up from the tool room is an utter lack of tradition. He has it all to acquire. I speak now in modern terms; there was a time when the shop man had traditions, but that was when men became mechanics only after years of disciplined apprenticeship, not after a few weeks of screwing nut No. 23236 onto clutch housing No. 4646. And, to augment the ranks of the engineering graduate, there are still plenty of men who were drilled in the old school, men who took up the bow pencil only after they had thoroughly mastered the micrometer and sine bar. To these old timers, the union has about the same ranking as it has to the man from Sheffield or M. I. T.

Then, too, many of the younger men who have come up from the shop are progressive and ambitious, and are averse to the union type of organization with its closed shop policy and inevitable levelling of wages, in which,

somehow, the minimum too often becomes the maximum.

We have, therefore, a strong obstructionist force in the ranks of the designers opposed to unionism, but, the strongest force of all is the collective higher intelligence of the men engaged in the designing vocations. And, the higher the composite intelligence of a group, the more progressive that group, the more reluctant it is to shoulder the yoke of a labor dictator.

I do not mean that there isn't plenty of intelligence in the ranks of organized labor. I speak in terms of averages, and insist that the creative mind (and surely designing demands creative talent) is on a higher plane than the mental level of the manual worker, as, for instance, the bricklayer, the steam fitter, the garment worker or the dingman. One naturally excepts the watchmaker and the experimental worker.

This is not disparaging the manual worker, who is a useful and constructive force in our scheme of things, and who is often a victim of lack of opportunity rather than of inherent talent or native ambition. It is merely a statement of fact, broadly applied. The mason works to plans laid out by a draftsman, and, except on small jobs, under the supervision of an engineer, as the garment operative works from the model of a fashion artist. The garment worker is no more a tailor than the man who screws the nut on the clutch housing is a mechanic.

Another factor entering into the reluctance of men in the designing vocations to consider unionism favorably is the type of men engaged in union organization. I refer now specifically to organization of draftsmen; the man who could successfully organize a group of toolmakers or garment workers is palpably out of his element in the engineering fields. (Of course, in the organizers opinion, the intelligent draftsman falls for his line, just like that.)

Coming at a time when harmony and accord is essential to progressive recovery, these organizers, so called, have spread dissension and discord. Who are they and where did they come from? Who knows? Of dubitable origin and questionable background, any idea of past accomplishment, whether constructive or destructive, is a matter of veiled innuendo and inference rather than of definite knowledge.

Such men have come into prominence on a wave of labor organization, and being opportunists, have chosen the designing and engineering vocations as (to them) new and lucrative fields for the propagation of union principles. And, while the attitude of organized labor is changing, belatedly, and growing more conservative, it is nevertheless true that the mushroom growth of organization has developed its sports (deviations) of racketeering, and that in many cases a malcontent minority has attempted to dominate a reluctant majority.

However suspicious one may be of such organizers, and of their motives, one cannot, in fairness, but concede them qualities which, directed into

constructive rather than destructive channels, would have carried them far. Smooth, ingratiating, humble, (like Uriah Heep) they have qualities of persistence that would be the envy of a research worker. For instance, in a large mid-western city, where the men in an organization of designers overwhelmingly voted down a resolution to affiliate with a major union group, the proponents of federation took their defeat philosophically.

"Oh well, we'll just have to keep on educating them until they get to know what's good for them."

The process of education continues apace; just how the boys will like the course remains to be seen.

From the foregoing, it should not be inferred that the writer is opposed to organization among engineering workers; on the contrary, he considers such organization desirable and beneficial. But, such organization should be on a higher plane than unionism *per se*, and entirely independent of union influence. It must be independent, must be an autonomous organization free to work out its own problems, and led by men whose record is so open that their motives are above suspicion by employers and employees alike.

The writer recalls a conversation with an N.R.A. official (a deputy administrator) and repeats here the gist of the latter's thoughts.

"I like the idea of draftsmen and engineers organizing, and hope that it will be a cooperative type of organization, for, the Administration is sorely beset, and we are working outrageous hours to put recovery across. We will put it across. And if a body of intelligent men will organize and remain neutral and unprejudiced, so that they can coldly analyze a situation, it is possible that when it comes to an issue involving the common weal, they can sway that issue to the advantage of the entire nation. The trouble with organization right now is that it is so one sided, so biased . . . Well, if you can sell that idea to your associates, you will have done a great work."

I have tried, but, a prophet has little honor in his own town, and I must confess to having been in Detroit too long to be classed as an itinerant evangelist of workingmen's rights. Not that I do not believe in those rights. On the contrary. But, I also believe in the rights of the employers; in the right of management to work out policies of expansion and to create wealth. Any organization that fails to concede that right fails in its mission; an organization of draftsmen must concede it if it is to effect its economic and social destiny.

Just how, in my personal opinion, such organizations should be projected, will be taken up in a later article. But before that is broached, we must first consider the status of the designer, and the forces aligned against him should he be influenced by the radical type of organizer. We must also consider objectives, as hours and compensation, and whether those objectives are entirely in harmony with the plans for national recovery. These factors will be treated in succeeding issues.

THIS MONTH'S COVER

Hydraulic Power Unit

Ex-Cell-O Aircraft & Tool Corporation of Detroit, Michigan, announces a self-contained, compact new Hydraulic Power Unit, engineered to meet present day demands for drilling, reaming, counterboring, spotfacing and similar operations.

The hydraulic power units as illustrated on the front cover are available in three sizes to meet the general demands for this type of unit and can be mounted either singly or in multiples and operated individually or collectively with a manual or by remote control. The small unit, No. 23, has an eight inch stroke; the medium, No. 25, has a 10 inch stroke, and the large, No. 28, has a 12 inch stroke.

These units are adjustable for length of stroke, length of rapid traverse and length of feed. The rate of feed can be easily changed from the outside of the unit by graduated adjusting valves while the unit is feeding, permitting the selection of the most suitable feed. There are two forward feeds each independent of the other. Adjustable dogs for controlling the rapid traverse, feeds, stop and reverse of the unit, are provided.

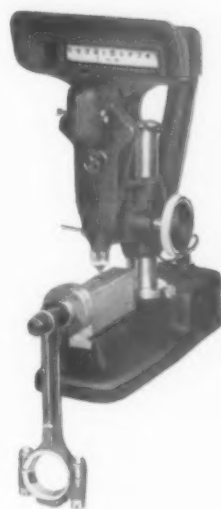
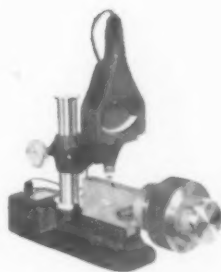
All essential parts are accurately machined, hardened and ground. Alloy steel parts are used wherever possible to insure long and uninterrupted service.

The electric motor is mounted on an adjustable base located above the unit proper. It drives the hydraulic pump and drive shaft by "V" belts. The pump driving shaft is connected through change gears to the spindle driving shaft which at the inner end is splined and forms a sliding driver connection with the spindle. The splines on the driving shaft are accurately ground to size. The spindle is supported at both front and rear ends in the main quill which carries a piston that is hydraulically operated. By changing pressure at either end of the piston the main quill or ram moves either forward or backward providing the feed for the unit. The speed of the spindle can be altered by removing the cover plate at the rear of the unit and changing the speed gears.

The quill or ram of the hydraulic unit is furnished with a mounting flange for attaching multiple spindle heads. The hole in the spindle nose is accurately ground and has a keyway for driving the multiple head or tools. A sight gage is provided to show the level of the oil and a pressure gage is provided for indicating the hydraulic pressure, the adjustment of which is accessible from the outside.

A machine pad is provided on each side of the unit near the front end for attaching guide bar brackets for multiple heads or jig plates. The base of the unit has two longitudinal keyways in the center for lining up the unit. The side of the base flange is so designed that it may be machined as a dovetail slide if desired.

ACCURACY AND SPEED



Better than 2000 parts per hour are now being inspected on the Sheffield Gage as a matter of daily routine.

A movement of $\frac{1}{8}$ " on the dial of the Visual indicates a gaging element displacement of only 25 millionths. By interpolation the gage is easily read to "hundredths."

The Sheffield Visual measures inside diameters just as readily as outside diameters and without any fundamental change in the instrument. A simple change in the lower anvil is all that is required to shift from one type of measurement to the other.

These instruments incorporate no gears or levers to wear out of adjustment or throw an error into the reading. They are all solid sturdy units having an exceptionally long service life.

Ask for actual service data on the No. 1 and No. 3 Visual Gage if you are in search of a means to reduce your inspection costs.

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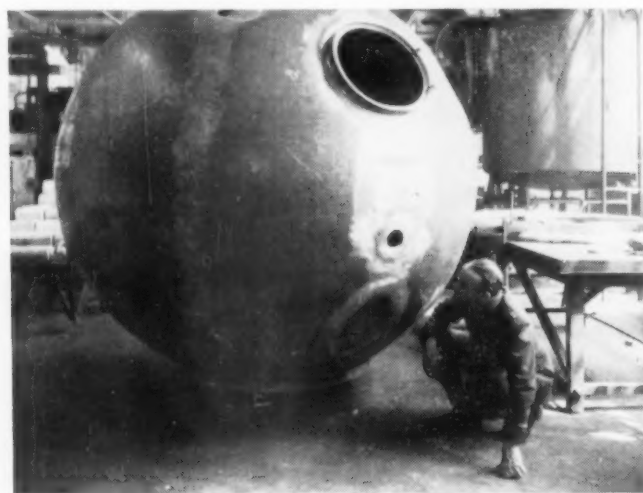
SHEFFIELD GAGE
CORPORATION • Dayton, Ohio

DOWMETAL IN THE STRATOSPHERE

(Continued from page 9)

being discharged through the plug cock into the outside atmosphere.

The outside of the gondola was painted black over the lower half and white on the upper half. The purpose being to permit sufficient absorption of heat from the sun through the black portion to maintain a living temperature within the gondola. If the entire gondola had been painted black, the temperature would rise to unlivable heights because of the great absorption of heat.



The Army gondola under construction. Captain Stevens in foreground.

The gondola was supported from the balloon by a series of ropes, terminating in a rope load ring about 6 inches above the gondola. This load ring is lashed to the grommets which may be seen on the top side of the gondola. These grommets are inserted in the upper ends of ten cradle straps $\frac{1}{4}$ " x $1\frac{5}{8}$ " in size, which are tied together at the bottom by a lower Dowmetal load ring.

The gondola was designed throughout with an estimated safety factor of 17. Following the completion of the set-up a pressure test was conducted by filling the gondola with water and applying an internal pressure of 40 pounds per square inch. Following this, air was put into the gondola at a pressure of 15 pounds per square inch or 50% over the working pressure. These tests were both satisfactory and indicated that the gondola was safe for use.

"AFTER THE BALL"

After the Ball was over, it was discovered that Mrs. William Hart had lost her bracelet, while "Bill" had found a key. Communicate with Mr. Hart in regard to either of the above at Fitzroy 4235. Colonial Broach Company, Detroit.

A NEW NAME AND A NEW "DRESS" FOR THE A. S. T. E. JOURNAL

Readers and members of this publication, no doubt, will wonder at the change in name from *The A. S. T. E. Journal* to *The Tool Engineer*. Naturally the American Society of Tool Engineers is not anxious to change the name of its official publication and there must be a good reason for making such a change.

From the outset it has been the purpose of this publication to promulgate the professional standing of the trained tool engineer. It was recognized by The Society that its new title *The Tool Engineer* would bring about this objective that much sooner, and would present a name more readily descriptive of the context of the magazine and more easily intelligible to the reading public.

Publication Committee Re-organized

To unburden some of our faithful and loyal members who have served on this committee for a long time, especially Mr. O. B. Jones, who has so patiently borne the brunt of this activity of the Society, a new committee has been appointed. Bill Hart is Chairman with Ben Welte, and Dave Forsman his committeemen.

All members are urged to send all news items concerning anything of interest to the Society membership, to *The Tool Engineer* or to Mr. Hart. Mr. Hart may be reached at 147 Jax Campau, Detroit.

AMERICAN SOCIETY OF TOOL ENGINEERS JANUARY MEETING

The January meeting was called to order at 8:40 p.m. in the Spanish Grille of the Fort Shelby Hotel, Thursday evening January 25th. Mr. Robert Lippard, First Vice President presided in the absence of Mr. T. B. Carpenter, president of the Society.

Mr. Lippard introduced the speaker of the evening, Mr. A. W. Winston, Chief Metallurgist of the Dow Chemical Company. Mr. Winston's subject was "Uses and Fabrication of Magnesium Alloys."

A large audience was present to hear Mr. Winston and he certainly delivered a splendid lecture of real interest. He discussed with members the facts and technical data which are used in connection with this metal. He also had with him a large exhibition of sample parts made from this alloy, showing its practical uses and applications.

New Nominating Committee

At this meeting a vote was taken by members for a new nominating committee. The following members were elected to serve: Mr. Diamond, Chairman, Mr. Smila, Mr. Gray, Mr. Fleming, Mr. Hart.

New Literature Available

Complete Information on Carboloy—a new 36 page booklet describing in detail six major benefits from Carboloy tools, size of plants which can profitably use Carboloy, outline of educational work that is necessary to start using it, the four ways in which Carboloy may be purchased and complete operation and design recommendations. Address Carboloy Co., Detroit, Michigan.

The Charles L. Jarvis Company, Gildersleeve, Conn., a new "Biax No. 2 Tapping Attachment" in addition to their regular line of all ball bearing, high speed attachments. This new tool has a capacity from $\frac{1}{4}$ " to $\frac{3}{4}$ ", is entirely ball bearing equipped, has forward as well as reverse friction, double reverse speed, chrome nickel steel gears and the housing is of special aluminum alloy. Tap breakage, it is claimed, is almost entirely eliminated.

Langlois Grinding Company, 3340 Lambie Place, Detroit, Michigan, recently issued a new catalog covering in detail all of the American Gage Design Standards on plug and ring gages, as well as a description of the company's facilities for salvaging gages by Chromium Plating. "Langlois-Metal" a new development of the company is also described. This is a tungsten carbide application through a fusing process.

A most unusual presentation of the **Koebel Diamond Tool Company**, 1220 Oakman Boulevard, Detroit, is a primer-like

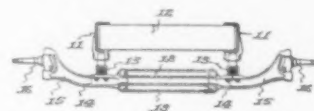
"First Reader for Diamond Users." Large type, such as used in elementary grade school texts describes in simple A B C terms the intricacies of effective and economical usage of diamonds and diamond tools.

MOTOR VEHICLE

Erle K. Baker, Detroit, Mich., assignor to Baker Axle Company, Cleveland, Ohio, a corporation of Ohio

Application December 4, 1933, Serial No. 700,775

9 Claims. (Cl. 267-19)



1. In combination with a vehicle frame and a pair of wheels, an axle comprising two end axle sections each having inner terminal portions forming the upright sides of a parallel motion mechanism, said sides being fixed transversely with respect to the wheels, two transverse members pivotally connected one above the other to and extending between said portions and completing said parallel motion mechanism, a chassis frame, longitudinal leaf spring units connected to the frame and rigidly attached to said axle sections outside said pivotal connections for supporting the frame thereon, said springs being adapted through their torsional effort to hold the sections normally in alignment.

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which provide as much as $\frac{5}{8}$ " grinding
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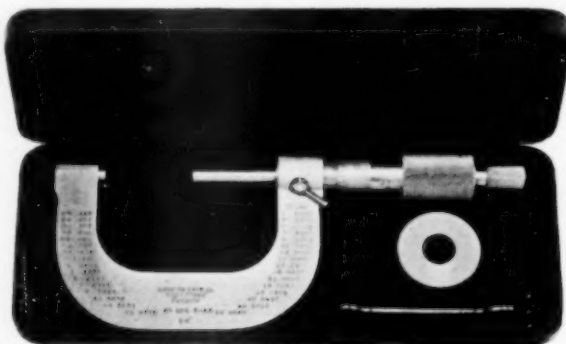
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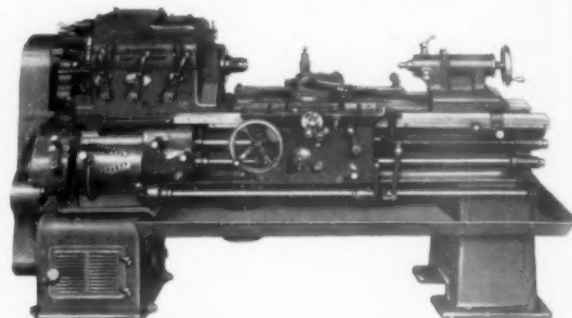
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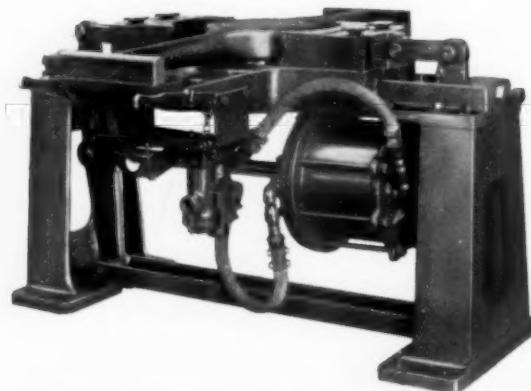
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CHICAGO, ILLINOIS

Society's First Annual Ball a Huge Success

More Than Four Hundred Attend

● ● ●

THE First Annual Ball, sponsored by the American Society of Tool Engineers cannot be described as anything but a huge success. Actually, it exceeded the optimistic expectations of the entertainment committee. Originally it was intended to hold the affair in the Ball Room of The Fort Shelby Hotel, but the advance sales of tickets were so heavy that it was necessary to change the scene of activities to the Spanish Grille, which afforded considerably more room.

In spite of the inclement weather over four hundred people attended, and we have yet to hear of anyone who did not have a thoroughly enjoyable evening. Two excellent floor shows were provided by a talented troupe of dancers and singers. These shows were given at ten-thirty and at twelve o'clock and were very much enjoyed and encored by everyone. However, the one attribute of a successful dance is the music and in this respect the Society was particularly fortunate in having an excellent group of musicians who seemed to enter

wholeheartedly into the spirit of the occasion. Their infectious tunes and the well chosen instruments quickly caught the interest of the dancers.

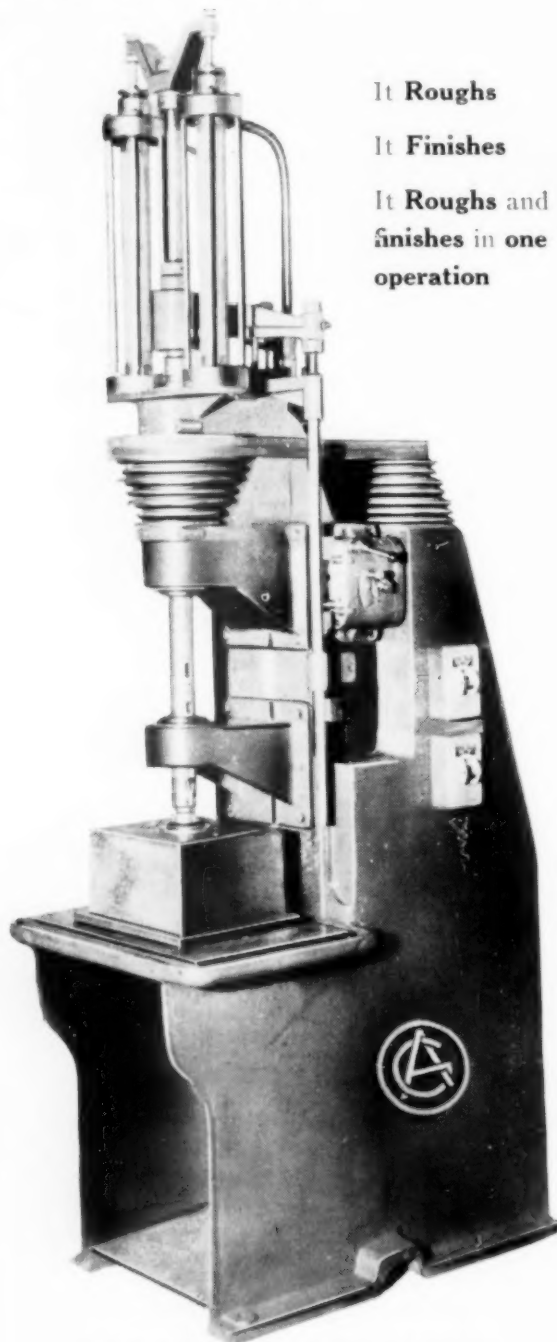
On the whole the affair was just the sort of entertainment that an up and coming young society should sponsor. The entertainment of the evening and the music was snappy and clever. The crowd was made up entirely of members and their friends and a better looking group of informal dancers would be hard to find. It did look as though the depression was over for the good A. S. T. Eers who attended. Many family groups were in evidence, and everything offered during the evening seemed to be appreciated by young and old alike. It is a real pleasure to plan and do things for a group who respond so splendidly. It is hard to estimate the value both to members and to friends, that a successful social occasion such as this brings to all. It is planned to have a similar frolic before the season is over, when an even larger attendance is anticipated.



An indoor flashlight photograph, rarely, is satisfying to the audience. Sometimes they provide a laugh or two. Judge for yourself how successful this photograph is . . . can you find yourself or your friends?

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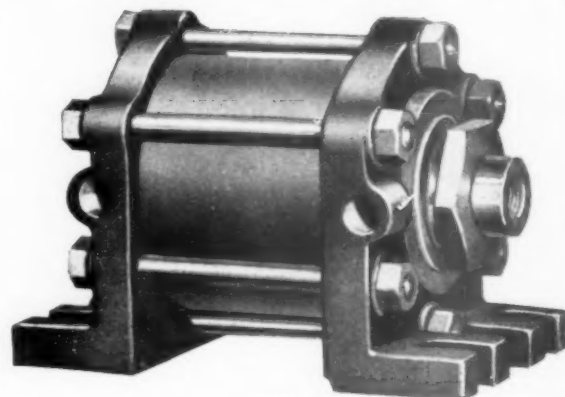
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INDEX BASES

WITH SINGLE LEVER CONTROL

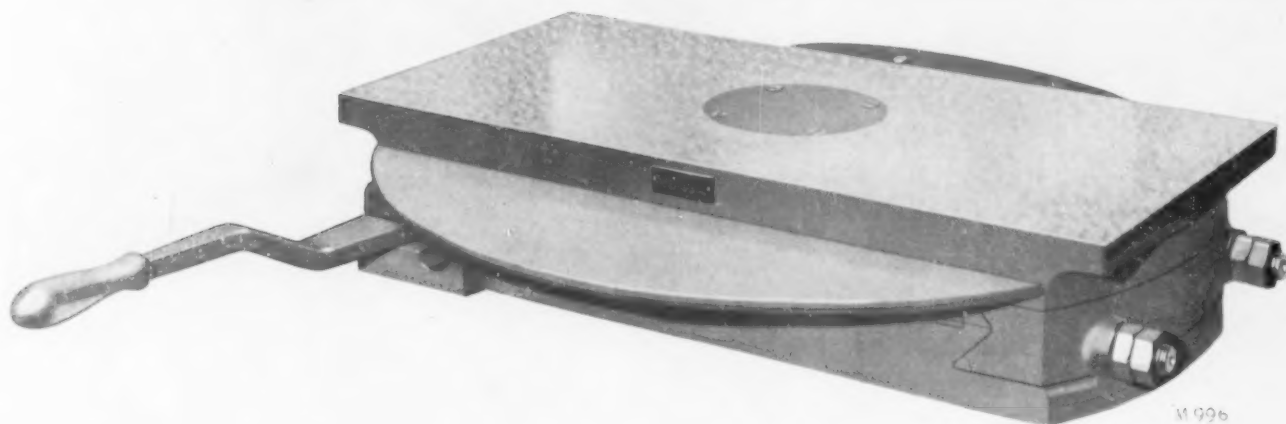


Fig. 1—Sundstrand standard Index Base with single lever control and chip guards.

Cut Milling Costs

In tooling thousands of milling operations, Sundstrand engineers designed many indexing fixtures of various kinds for cutting costs and increasing production. The features of design developed as a result of this experience are covered in a pending patent application and are incorporated in the standard Index Bases now being manufactured by the Sundstrand Machine Tool Co.

Can Be Used On Machine Tools Of Many Kinds and Any Make

One of the standard Sundstrand Index Bases is shown above in Fig. 1. These useful accessories can be used on machine tools made by any manufacturer, and for a variety of operations in addition to milling.

Have Many Desirable Features

Low and compact, tremendously powerful clamping, accurate locating, single lever operation, hardened steel wear strips and locators;—these are some of the desirable features in Sundstrand Index Bases.

Made In Six Sizes

Sundstrand Index Bases are made in six standard sizes ranging from 12" x 24" to 18" x 36" or 20" x 30". Any of these may have the control lever at the operator's right or left so that Bases can be used in pairs if desired.

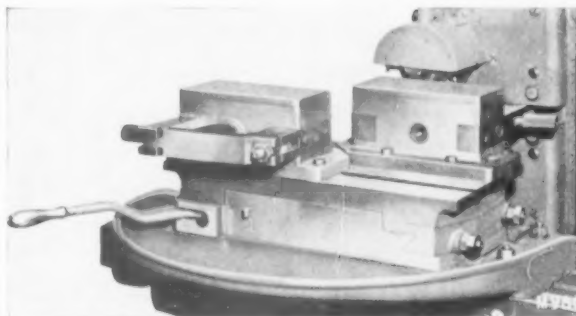


Fig. 2—Sundstrand Index Base with two fixtures and coolant trough. Operator changes work pieces in one fixture while milling is in progress at the other.

Can Be Adapted To Many Uses

One of the most frequent applications of these Index Bases is shown above in Fig. 2. Semi-standard Bases having three or more stations and/or automatic pneumatic or hydraulic indexing can readily be made to order.

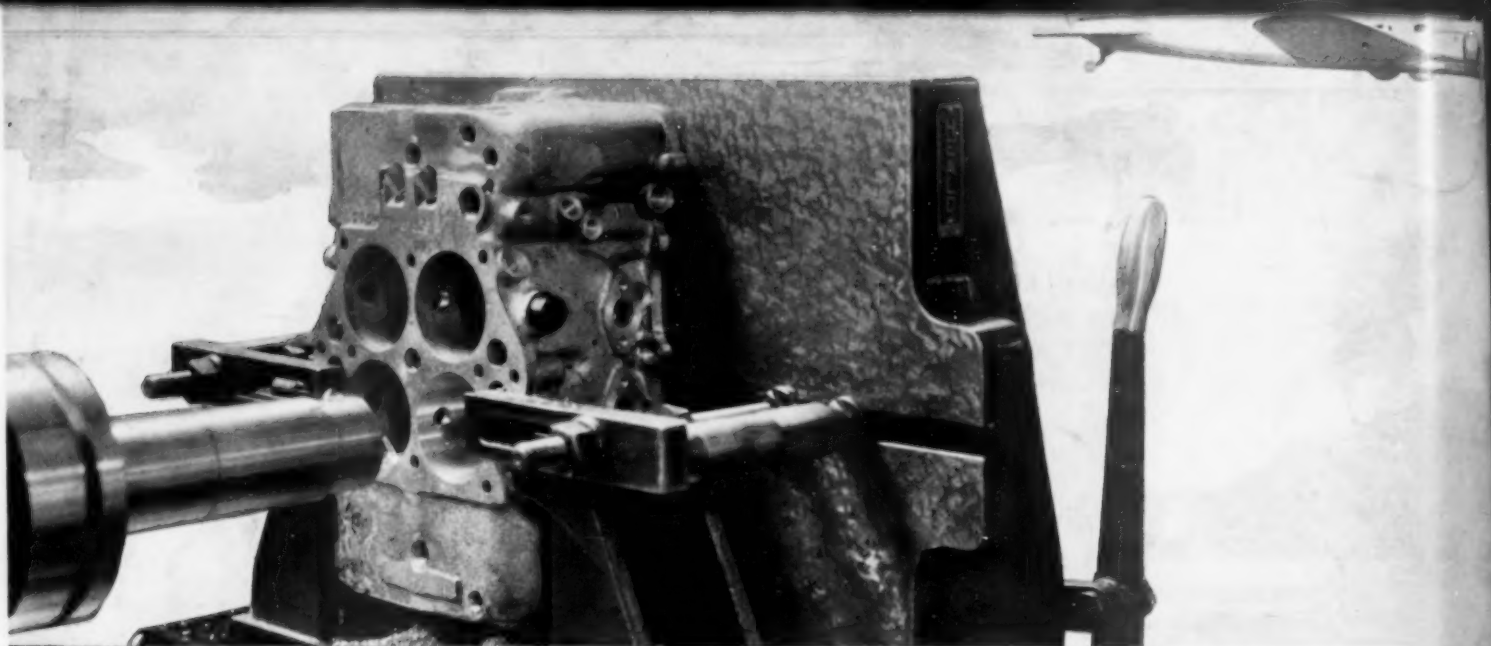
Get The Circular

We shall be glad to supply interested executives with a copy of the circular describing construction, advantages, applications and specifications of Sundstrand Standard Index Bases, and to submit proposals for semi-standard applications on request.

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machine and a heavy double end machine. Whether you have small lots and wide variety of work or mass production of one or several parts, one of these Bore-Matics will just meet your requirements.

A few examples of their possibilities are illustrated. If you have work made of soft steel, cast iron, or non-ferrous material that is to be bored, faced or turned, be sure to get full data about handling it on a Heald Bore-Matic.

... to TRACTORS

Top—Boring a carburetor casting for airplane engine.

Right—Style No. 47 Bore-Matic with various quills for boring and facing tractor bearing cages.

Bottom—Various truck parts all bored on a Heald Bore-Matic.

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